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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/725,437

11/29/2000

Farooq Ullah Khan

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01/17/2006

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EXAMINER

QURESHI, AFSAR M

ART UNIT

PAPER NUMBER

2667

DATE MAILED: 01/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/725,437	Applicant(s) KHAN ET AL.	
	Examiner Afsar M. Qureshi	Art Unit 2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to 'Pre-Appeal Brief Request for Review' dated 10/7/2005, and subsequent conference decision mailed to Applicant dated 11/18/2005.
2. Following to decision to reopen prosecution, the Final rejection, mailed on 6/9/2005, is withdrawn. New Office action follows.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Subbiah et al. ('Sabbiah') US 6,366,961, in view of Wasilewski et al. ('Wasilewski'), US 2004/0003008 A1.

Claims 1-2 Subbiah teaches attaching a sequence identifier ("Sequence Number") and a user identifier to sub-packets ("mini packets") (Abstract; column 5, lines 22-37). These sub-packets are inherently transmitted and received. Although Sabbiah teaches of including Channel Identifier (CID 210), nonetheless (see col. 5, lines 30-35), Sabbiah is silent about associating an "encoder packet identifier" as claimed herein. Wasilewski, in the same field of endeavor, teaches of encrypting and assigning an

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encoder identifier (PID) to each transport packet 703 (fig. 7) corresponding to number of channels in similar way as claimed by the Applicant (see [0175], [0176] and [0177], pages 10-11.

As to claim 2, in order to provide a substantial throughput improvement over the partial transmission code combining ARQ scheme as disclosed in the exemplary embodiments of the invention by Subbiah. Most ARQ error control techniques (known at the time of this application) integrated error detection using standard CRC, as well as request for re-transmission using PDU, e.g., parity check bit.

Therefore, one of skill in the art, at the time of invention, would be motivated to modify the same utilizing the digital encryption standard algorithm disclosed by Wasilewski since Subbiah is concerned about transmitting information to the next hop securely same as Wasilewski.

Claim 3 The cited art does not specifically disclose that the sequence identifier comprises more than one bit for indicating a transmission sequence of the first sub packet. It would have been obvious to one of ordinary skill in the art to modify the invention of Subbiah so that the sequence number comprises more than one bit because such an arrangement would enable the system to handle long packet sequences.

Claims 4 and 5. Subbiah et al. fails to teach that an encoder packet identifier comprises one bit if the parallel channel encoder packet transmission system has two channels. However, as discussed in the rejection of claim 1 above, Wasilewski discloses the schemes wherein bits are assigned with respect to channels used therein

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(see fig. 8, and [0179], page 11). As will be immediately apparent to one of skill in the art, at the time of invention, these schemes can be employed to any encoder packet transmission system having different number of channels.

4. Claims 6-9, 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Subbiah and Wasilewski and further in view of Rathonyi et al. ("Rathonyi" US 6,359,877)

Claims 6 and 7 The cited art of Sabbiah and Wasilewski fails to teach receiving a NACK from the user identified by the user identifier; attaching a second sequence identifier, the user identifier, and the encoder packet identifier to a new version of the: first sub-packet to produce a new version sub-packet with identifiers, the new version first sub-packet being soft-combinable with the first sub-packet, the second sequence identifier indicating that the new version sub-packet is a retransmission of the first sub-packet; and retransmitting the new version sub-packet with identifiers, as claimed herein. However, Rathonyi teaches receiving a NACK from the user identified by the user identifier Fig. 3D); attaching a second sequence identifier ("sequence number, NS") to a new version of the first sub-packet to produce a new version sub-packet with identifiers (column 10, lines 4-8), the new version first sub-packet being soft-combinable with the first sub-packet (column 14, lines 22-41). It would have been obvious to one of ordinary skill in the art to incorporate receiving a NACK from the user identified by the user identifier since both inventions are concerned with ARQ scheme and the feedback.

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Such an arrangement would enable the receiver to determine whether the two sub-packets should be soft-combined.

Claim 8 Already discussed in view of Wasilewski. See rejection of claim 1.

Claim 9 Subbiah et al. fail to teach that both sub-packets with identifiers are transmitted over different channels due to the scope of the invention. However, both Wasilewski and Subbiah are concerned about transmitting packets of different rates. Inherently, different rate packets are transmitted over different channels, as discussed by Rathonyi (see col. 3, lines 1-61). Transmitting sub-packets, with identifiers, over different channels would allow for reuse of the identifiers.

Claim 11 Subbiah teaches attaching a sequence identifier ("sequence number") and a user identifier to sub-packets ("mini packets") (abstract; column 5, lines 22-37). These sub-packets are inherently transmitted and received. Other limitations, as Claimed herein, are disclosed and discussed in the rejection of claims as above, however, Subbiah and Wasilewski fail to disclose using the user identifier to determine whether the sub-packet is destined for the receiver; and soft combining retransmissions with first transmissions. Rathonyi teaches soft combining of *re-transmitted* sub-packets (Abstract; column 14, lines 22-41). Rathonyi teaches that soft combining offers the advantage of increased probability of successful decoding. It would have been obvious to one of ordinary skill in the art to incorporate, into the teachings of Subbiah and Wasilewski using the user identifier to determine whether the sub-packet is destined for the receiver because such an arrangement would prevent the waste of channel capacity that would result from the receiver receiving packets not intended for it. It would have

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been obvious to one of ordinary skill in the art to use packet identifiers because such an arrangement would enable the receiver to know with which previously transmitted or re-transmitted packets should be combined to correct errors. It would have been obvious to one of ordinary skill in the art to modify the invention of Subbiah et al. to include softcombining, as in Rathonyi et al. because such an arrangement would increase the probability of successful decoding.

Claims 12 and 13 As discussed in the rejection of claims 1 and 11 above, the cited art discloses that the retransmission pattern, different or identical channels, can be selected based on rate compatible repetition codes of decreasing rates. A motivation to arbitrarily selecting channels over the partial retransmission code combining ARQ scheme would be dependent upon achieving maximum throughput.

Response to Arguments

5. Applicant's arguments with respect to claims 1-9 and 11-13 have been considered but are moot in view of the new ground(s) of rejection.

The Applicant argued that the cited art (Subbiah and Kallel) fail to disclose the three identifiers, sequence identifier, user identifier and an encoder packet identifier. Examiner believes the Digital Encryption Standard algorithm used by Wasilewski to encrypt data packet and to assign packet identifier and categorizing into PID 0 (705 (e) and PID 1 (705 (c), fig. 7) reads on limitations claimed herein.

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6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Atkins, III et al. (US 6,292,568)

Banker et al. (US 6,005,938)

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Afsar M. Qureshi whose telephone number is (571) 272 3178. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272 3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



1/13/2006

**AFSAR QURESHI
PRIMARY EXAMINER**